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REMARKS

In the non-final Office Action, the Examiner noted that claims 1-21 are pending in the application and that claims 1-21 stand rejected. By this response, claims 1-21 continue unamended.

In view of the following discussion, the Applicants submit that none of the claims now pending in the application are obvious under the provisions of 35 U.S.C. §103. Thus, the Applicants believe that all of these claims are now in allowable form.

In the Specification:

The Applicant has amended the specification to provide minor grammatical corrections and change reference designations to conform to the reference designations in the drawings. The Applicants submit that such grammatical corrections or reference designation changes do not add any new subject matter to the application.

REJECTIONS

35 U.S.C. §103

A. **Claims 1-3, 5-13, and 18-21**

The Examiner has rejected claims 1-21 under 35 U.S.C. §103(a) as being unpatentable over Brendel et al. (U.S. Patent No. 5,774,660, hereinafter "Brendel") in view of Schuba et al. (U.S. Patent No. 6,724,733, hereinafter "Schuba"). Applicants respectfully traverse the rejection.

Independent claim 1 (and similarly, independent claim 16) recites:

"A method for determining at least one best-performing content server in response to a request in a network including a plurality of content servers, at least one redirection server, and a plurality of clients, the method comprising the steps of:
creating a plurality of client clusters, wherein each of said plurality of client clusters includes one or more clients having similar network distance properties;
identifying said at least one best-performing content server for each of said plurality of client clusters by determining network distances between each of

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said plurality of client clusters and each of said plurality of content servers and
selecting at least one content server for each of said plurality of client clusters
having a minimum network distance there-between; and
      mapping each of said plurality of client clusters to a corresponding said at
least one identified best-performing content server." (emphasis added),

The test under 35 U.S.C. § 103 is not whether an improvement or a use set forth in a patent would have been obvious or non-obvious; rather the test is whether the claimed invention, considered as a whole, would have been obvious. Jones v. Hardy, 110 USPQ 1021, 1024 (Fed. Cir. 1984) (emphasis added). Thus, it is impermissible to focus either on the "gist" or "core" of the invention, Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., 230 USPQ 416, 420 (Fed. Cir. 1986) (emphasis added). Moreover, the invention as a whole is not restricted to the specific subject matter claimed, but also embraces its properties and the problem it solves. In re Wright, 6 USPQ 2d 1959, 1961 (Fed. Cir. 1988) (emphasis added). The combination of Brendel and Schuba fail to teach or suggest the Applicants' invention as a whole.

In particular, Brendel discloses

FIG. 2 shows server farm 30 which contains server 22 serving browser 10, and servers 22A, 22B, 22C which are servicing other browsers (not shown). Servers 22A, 22B, 22C each contain their own disks 24', each with a copy of all the web pages in the site, including requested file 26. Server farm 30 is basically a group of replicated servers which can service requests from multiple browsers. (see Brendel, col. 2, lines 59-65).

Nowhere in the Brendel reference is there any teaching or suggestion of "creating a plurality of client clusters, wherein each of said plurality of client clusters includes one or more clients having similar network distance properties." The objective of the clustering operation is to partition the total IP address space into smaller clusters or groups where each cluster is defined by a particular CIDR address prefix. Each cluster is made up of clients having IP address prefixes which match the CIDR address prefix of the cluster. In addition to creating client clusters, the clustering operation also provides an estimate of the mean network distance from clients in each client cluster to each content server 54a-e in the network. (see Applicants' specification, page 17, lines 7-12). (emphasis added)

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This is completely different from the Brendel reference, since the Applicants' invention creates client cluster (i.e., client 52 in FIG. 1), as opposed to "server farms" which represent a group of content servers. In other words, Brendel merely discloses a group of replicated servers that can service requests from multiple browsers. Nowhere in the Brendel reference is there any teaching or suggestion that the hosts facilitating the browsers (i.e., clients) are formed into client clusters. Therefore, the Brendel reference fails to teach or suggest "creating a plurality of cluster clients."

Furthermore, the Schuba reference fails to bridge the substantial gap as between the Brendel reference and the Applicants' invention. In particular, Schuba discloses

> In a step S22, distance metric information associated with the network distance between the server(s) and node(s) and client and node(s) is obtained. Referring to FIG. 2(a), in one or more embodiments, this step S22 includes the step S24 of determining or generating the distance from one or more servers S to one or all of the nodes of the selected node set. In one or more embodiments of the invention, this distance is determined by generating distance metric information or data associated with each server S offering a desired service and one or more paths from the server S through the network to the selected node(s). A variety of apparatus and methods well known in the art are contemplated for use in determining this distance. (see Schuba, column 6, line 59 to column 7, line 3).

Even if the two references could somehow be operably combined, the combination would merely disclose measuring distance between a group of servers and a node. Nowhere in the combined references is there any teaching or suggestion of "creating a plurality of client clusters, wherein each of said plurality of client clusters includes one or more clients having similar network distance properties" and "determining network distances between each of said plurality of client clusters and each of said plurality of content servers." Therefore, the combined references fail to teach or suggest the Applicants' invention as a whole.

As such, the applicants submit that independent claims 1 and 16 are not obvious and fully satisfy the requirements under 35 U.S.C. § 103 and are patentable thereunder. Furthermore, claims 2-3, 5-13, and 18-21 depend, either directly or indirectly, from independent claims 1 and 16, and recite additional features thereof. As

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such, and for at least the same reasons discussed above, the applicants submit that these dependent claims also fully satisfy the requirements under 35 U.S.C. § 103 and are patentable thereunder. Therefore, the applicants respectfully request that the rejection be withdrawn.

B.   Claims 4, 14-15, and 17

The Examiner has rejected claims 4, 14-15, and 17 under 35 U.S.C. §103 as being obvious over Brendel in view of Schuba and in further view of Wolf et al. (U.S. Patent No. 6,374,297, hereafter "Wolf"). The Applicants respectfully traverse the rejection.

Claims 4, 14-15, and 17 respectfully depend from independent claims 1 and 16, and recite additional features thereof. In particular, claim 4 (and similarly claims 14-15 and 17) recites in part:

> "A method for determining at least one best-performing content server in response to a request in a network including a plurality of content servers, at least one redirection server, and a plurality of clients, the method comprising the steps of:
>   creating a plurality of client clusters, wherein each of said plurality of client clusters includes one or more clients having similar network distance properties;
>   identifying said at least one best-performing content server for each of said plurality of client clusters by determining network distances between each of said plurality of client clusters and each of said plurality of content servers and selecting at least one content server for each of said plurality of client clusters having a minimum network distance there-between; and
>   mapping each of said plurality of client clusters to a corresponding said at least one identified best-performing content server." (emphasis added).

As discussed above, the combination of Brendel and Schuba merely disclose measuring distances between a group of content servers and each node in a network. The Wolf reference fails to bridge the substantial gap as between the Brendel and Schuba references and the Applicants' invention.

In particular, Wolf discloses

According to the second stage for achieving load balancing goals, the scheduling decision on which server should handle a new customer web site request is performed on the pre-existing probabilistic basis: Specifically, those servers to which the web site is logically assigned and

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which already have current activity for that web site are examined, and servers are chosen amongst those servers greedily, according to their routing probabilities. If the routing probabilities are all equal, then the resulting round-robin policy amounts to assigning customers in cyclic fashion. This approach naturally tends to balance the load fairly well. However, periodically load balancing using the greedy probabilistic approach alone may degrade too much relative to the optimal goal. When the quality of the server load balancing differs from the goal by more than a predefined threshold, or perhaps when the actual performance at the various servers varies too far from optimally balanced, the real-time method is initiated. This method is also graph-theoretic, and has the effect of shifting load from relatively overloaded to relatively underloaded servers. (see Wolf, column 3, lines 13-31).

Even if the three references could somehow be operably combined, the combination would disclose measuring distance between a node and a group of content servers, and providing server load balancing. Nowhere in the combined references is there any teaching or suggestion of "creating a plurality of client clusters" and "determining network distances between each of said plurality of client clusters and each of said content servers". Therefore, the combined references fail to teach or suggest the Applicants' invention as a whole.

As such, the Applicants submit that claim 4 (and similarly claims 14-15 and 17) is not obvious and fully satisfies the requirements under 35 U.S.C. §103 and is patentable thereunder. Therefore, the Applicants respectfully request that the rejections be withdrawn.

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CONCLUSION

Thus, the Applicants submit that claims 1-21 are in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Eamon J. Wall or Steven M. Hertzberg at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

1/5/05

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